

IN THE CLAIMS:

- 1 1. (Original) A method for stretching and mounting a screen
- 2 printing screen, comprising:
- 3 providing an outer frame;
- 4 providing an inner frame;
- 5 providing a screen/mesh with two print direction sides and
- 6 two ends;
- 7 clamping an end of the screen/mesh in a print direction;
- 8 applying significant tension forces to the screen/mesh in
- 9 the print direction;
- 10 moving the outer frame to contact the stretched screen/mesh;
- 11 attaching the screen/mesh to the outer frame in the print
- 12 direction;
- 13 trimming excess screen/mesh in the print direction;
- 14 moving the inner frame to contact the screen/mesh;
- 15 attaching the screen/mesh to the inner frame in the print
- 16 direction; and
- 17 providing imaging/printing on the screen/mesh.

1 2. (Original) The method according to claim 1, further
2 comprising applying tension forces to the screen/mesh in a
3 direction perpendicular to the print direction that are lower than
4 the applied significant forces in the print direction.

1 3. (Original) The method according to claim 1, further
2 comprising applying small lateral forces to the screen/mesh
3 perpendicular to the print direction prior to clamping or
4 stretching the screen/mesh to ensure the screen/mesh is flat,
5 with no significant non-uniformities/wrinkles.

1 4. (Original) The method according to claim 1, wherein the
2 clamping step further comprises:
3 positioning the outer frame; and
4 clamping the screen/mesh to the outer frame.

1 5. (Original) The method according to claim 1, wherein the
2 stretching step further comprises:
3 applying a strip of material to each print direction side of
4 the screen/mesh to provide a seal against fluid encroachment in a
5 bond between the screen/mesh and the inner frame.

1 6. (Original) The method according to claim 1, wherein the
2 attaching step further comprises attaching the screen/mesh to the
3 inner frame by using spray adhesive, adhesive glue, or double
4 sided self-adhesive tape.

1 7. (Original) The method according to claim 1, wherein the
2 providing an inner frame step further comprises providing the
3 inner frame in a fixed format.

1 8. (Original) The method according to claim 1, wherein the
2 providing an inner frame step further comprise:

3 providing the inner frame in a multi-piece format with
4 plural pieces and connection pieces; and

5 applying lateral tension forces to the screen/mesh through
6 lateral fixed displacements of the piece movements or the
7 connection pieces of the multi-piece inner frame relative to each
8 other.

1 9. (Original) The method according to claim 1, wherein the
2 clamping an end of the screen/mesh step further comprises
3 clamping one of the two ends of the screen/mesh before stretching
4 and clamping the other of the two ends.

1 10. (Currently Amended) The method according to claim 1,
2 ~~further comprising ink/fluid barriers attached~~ wherein the
3 providing an inner frame step further comprises attaching
4 ink/fluid barriers to the inner frame.

1 11. (Currently Amended) The method according to claim ~~1~~ 10,
2 wherein the attaching ink/fluid barriers ~~are attached~~ to the
3 inner frame step further comprises attaching using hook and loop
4 fasteners, spray adhesive, liquid adhesive, self adhesive double
5 sided tape, mechanical locking elements, or single sided adhesive
6 tape.

1 12. (Original) The method according to claim 1, wherein the
2 providing a screen/mesh step further comprises providing the
3 screen/mesh as one or more screens/meshes on a roll.

1 13. (Original) The method according to claim 12, wherein
2 the providing a screen/mesh step further comprises:

3 applying a strip of material to each print direction side of
4 the one or more screens/meshes to provide an attachment point,
5 support, and a seal against fluid encroachment in a bond between
6 the one or more screens/meshes and the inner frame.

1 14. (Original) The method according to claim 12, wherein
2 the providing a screen/mesh step further comprises separating
3 individual screen/mesh pieces from the one or more screens/meshes
4 for shipping and storage, and providing the separated individual
5 screen/mesh pieces with a protective material.

1 15. (Original) The method according to claim 14, wherein
2 the providing a screen/mesh step further comprises:
3 applying a strip of material to each print direction side of
4 the separated individual screen/mesh pieces to provide an
5 attachment point, support, and a seal against fluid encroachment
6 in a bond between the separated individual screen/mesh pieces and
7 the inner frame.

1 16. (Original) The method according to claim 1, wherein the
2 providing a screen/mesh step further comprises providing the
3 screen/mesh as individual pre-cut pieces that are edge sealed to
4 ensure dimensional stability and integrity.

1 17. (Original) The method according to claim 16, wherein
2 the providing a screen/mesh step further comprises:

3 applying a strip of material to each print direction side of
4 the individual pre-cut pieces to provide an attachment point,
5 support, and a seal against fluid encroachment in a bond between
6 the individual pre-cut pieces and the inner frame.

1 18. (Original) An apparatus for stretching and mounting a
2 screen printing screen, the apparatus comprising:

3 an inner frame with a support barrier mechanism for
4 ink/fluid retention for controlled transfer during a printing
5 period to a screen/mesh with two print direction sides and two
6 ends; and

7 an outer frame configured for placing outside the inner
8 frame,

9 wherein the inner and outer frames do not connect, support,
10 or constrain each other to provide tension and ink barrier
11 functions, and significant tension forces are applied to the
12 screen/mesh in a print direction.

1 19. (Original) The apparatus according to claim 18, wherein
2 the apparatus is configured to apply tension forces to the
3 screen/mesh in a direction perpendicular to the print direction
4 that are lower than the applied significant forces in the print
5 direction.

1 20. (Original) The apparatus according to claim 18, wherein
2 the apparatus is configured to apply small lateral forces to the
3 screen/mesh perpendicular to the print direction prior to
4 clamping or stretching the screen/mesh to ensure the screen/mesh
5 is flat, with no significant non-uniformities/wrinkles.

1 21. (Original) The apparatus according to claim 18, further
2 comprising a positioning device configured to position the outer
3 frame, and clamp elements configured to clamp the screen/mesh to
4 the outer frame after the outer frame is positioned.

1 22. (Original) The apparatus according to claim 18, further
2 comprising means for applying strip material to edges of the
3 screen/mesh in the print direction to provide a seal against
4 fluid encroachment in a bond between the screen/mesh and the
5 inner frame.

1 23. (Original) The apparatus according to claim 18, further
2 comprising attachment means for attaching the screen/mesh to the
3 inner frame by using spray adhesive, adhesive glue, or double
4 sided self-adhesive tape.

1 24. (Original) The apparatus according to claim 18, wherein
2 the inner frame is configured in a fixed format.

1 25. (Original) The apparatus according to claim 18, wherein
2 the inner frame is configured in a multi-piece format with plural
3 pieces and connection pieces, and is configured for applying
4 lateral tension forces to the screen/mesh through lateral fixed
5 displacements of movements of the pieces or the connection pieces
6 of the multi-piece inner frame relative to each other.

1 26. (Currently Amended) The apparatus according to claim
2 18, ~~wherein the clamping an end of the screen/mesh step~~ further
3 comprises clamping means for clamping one of the two ends of the
4 screen/mesh before stretching and clamping the other of the two
5 ends.

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1 27. (Original) The apparatus according to claim 18, further
2 comprising ink/fluid barriers attached to the inner frame.

1 28. (Original) The apparatus according to claim 18, wherein
2 the ink/fluid barriers are attached to the inner frame using hook
3 and loop fasteners, spray adhesive, liquid adhesive, self
4 adhesive double sided tape, mechanical locking elements, or
5 single sided adhesive tape.

1 29. (Original) The apparatus according to claim 18, wherein
2 the screen/mesh is configured as one or more screens/meshes on a
3 roll.

1 30. (Original) The apparatus according to claim 29, wherein
2 the one or more screens/meshes is configured with a strip of
3 material on each print direction side of the one or more
4 screens/meshes to provide an attachment point, support, and a
5 seal against fluid encroachment in a bond between the one or more
6 screens/meshes and the inner frame.

1 31. (Original) The apparatus according to claim 29, wherein
2 the screen/mesh is configured as a separate individual
3 screen/mesh piece with a protective material for shipping and
4 storage.

1 32. (Currently Amended) The apparatus according to claim
2 31, wherein the ~~providing a screen/mesh step further comprises:~~
3 ~~applying a strip of material to each print direction side of~~
4 ~~the separated individual screen/mesh pieces~~ separate individual
5 screen/mesh includes a strip of material on each print direction
6 side to provide an attachment point, support, and a seal against
7 fluid encroachment in a bond between the separated individual
8 screen/mesh pieces and the inner frame.

1 33. (Original) The apparatus according to claim 18, wherein
2 the screen/mesh is configured as individual pre-cut pieces that
3 are edge sealed to ensure dimensional stability and integrity.

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1 34. (Original) The apparatus according to claim 33, wherein
2 the pre-cut pieces each include a strip of material on each print
3 direction side to provide an attachment point, support, and a
4 seal against fluid encroachment in a bond between the individual
5 pre-cut pieces and the inner frame.

1 35. (Original) A method of coating a screen printing
2 screen, comprising:

3 providing a screen/mesh with two print direction sides and
4 two ends; and

5 edge sealing or pre-coating each print direction side of the
6 screen/mesh to provide a seal against fluid encroachment in a
7 bond between the screen/mesh and a screen printing frame.

1 36. (Original) The method according to claim 35, wherein
2 the providing a screen/mesh step further comprises providing the
3 screen/mesh as one or more screens/meshes on a roll.

1 37. (Original) The method according to claim 36, wherein
2 the edge sealing or pre-coating step further comprises:

3 applying a strip of material to each print direction side of
4 the one or more screens/meshes.

1 38. (Original) The method according to claim 36, wherein
2 the providing a screen/mesh step further comprises separating
3 individual screen/mesh pieces from the one or more screens/meshes
4 for shipping and storage, and providing the separated individual
5 screen/mesh pieces with a protective material.

1 39. (Original) The method according to claim 38, wherein
2 the providing a screen/mesh step further comprises:
3 applying a strip of material to each print direction side of
4 the separated individual screen/mesh pieces to provide an
5 attachment point, support, and a seal against fluid encroachment
6 in a bond between the separated individual screen/mesh pieces and
7 the inner frame.

1 40. (Original) The method according to claim 35, wherein
2 the providing a screen/mesh step further comprises providing the
3 screen/mesh as individual pre-cut pieces.

1 41. (Original) The method according to claim 40, wherein
2 the providing a screen/mesh step further comprises:

3 applying a strip of material to each print direction side of
4 the individual pre-cut pieces to provide an attachment point,
5 support, and a seal against fluid encroachment in a bond between
6 the individual pre-cut pieces and the inner frame.

1 42. (Original) The method according to claim 35, wherein
2 the edge sealing or pre-coating step further comprises
3 pre-coating stencil material onto the individual pre-cut pieces.

1 43. (Original) A screen/mesh for a screen printing screen,
2 the screen/mesh having two print direction sides and two ends,
3 and being edge sealed or pre-coated along each print direction
4 side of the screen/mesh to provide an attachment point, support,
5 and a seal against fluid encroachment in a bond between the
6 screen/mesh and a screen printing inner frame.

1 44. (Original) The screen/mesh according to claim 43,
2 wherein the screen/mesh is one or more screens/meshes on a roll.

1 45. (Original) The screen/mesh according to claim 44,
2 wherein the one or more screens/meshes has a strip of material on
3 each print direction side.

1 46. (Original) The screen/mesh according to claim 44,
2 wherein the one or more screens/meshes are separated into
3 individual screen/mesh pieces from the one or more screens/meshes
4 for shipping and storage, and the separated individual
5 screen/mesh pieces each has a protective material.

1 47. (Original) The screen/mesh according to claim 46,
2 wherein each separated individual screen/mesh piece has a strip
3 of material on each print direction side to provide an
4 attachment point, support, and a seal against fluid encroachment
5 in a bond between the separated individual screen/mesh pieces and
6 the inner frame.

1 48. (Original) The screen/mesh according to claim 43,
2 wherein the screen/mesh is an individual pre-cut piece.

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1 49. (Original) The screen/mesh according to claim 48,
2 wherein the individual pre-cut piece includes a strip of material
3 on each print direction side of the individual pre-cut pieces to
4 provide an attachment point, support, and a seal against fluid
5 encroachment in a bond between the individual pre-cut piece other
6 individual pre-cut pieces and the inner frame.

 50. (Original) The screen/mesh according to claim 43,
wherein the screen/mesh includes pre-coating stencil material on
the screen/mesh.